

Flight Plan for Tuesday 1 April 2004:Including shortcut opportunities

Front Range survey

Default climb rates 1500 ft/min

Default flight altitude 1000 ft to 1500 ft AGL, within the mixed layer if possible.

Access to plane:00:00 CDT

Preflight :0000 hrs

Pt. 0 : Rocky Mountain Metro (39 54.5 N, 105 07.0 W)

Doors close: 00:00 CDT

Takeoff: 11:00 MDT

Head to Pt. 2

On the way to Pt. 2 climb to 15 kft., Flight scientist notes mixed layer depth.

Continue to Pt. 3

On the way to Pt. 3 start calibration, Flight Scientist calls for end of calibration

After calibration spiral descent at Pt. 3 to mixed layer (1-1.5 kft AGL, default)

Head to Pt. 4 within mixed layer.

Missed approach at Loveland Ft. Collins airport (Pt. 5).

Flight scientist notes mixed layer depth.

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Pt. 6 to Pt. 7 north of the Platte river. agricultural and oil exploration emissions,
At. Pt. 7, racetrack profile to 18 kft, followed by spiral descent to 1-1.5 kft AGL
(within mixed layer).

Pt. 8 to Pt. 9, south of Platte river, agricultural and oil exploration emissions.

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Shortcut Opportunity <==

Turn south at 104.5 W
and continue to Pt. 10
Profile: 30min

Distance: 30 min

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Pt. 9 to Pt. 11 transect upwind of front rage pollution sources for winds from the east.

Missed approach at Pueblo airport (Pt. 11).

Spiral up and down profile at Pt. 12.

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Shortcut Opportunity <==

Cut Pueblo flyby
Go directly
from Pt. 10 to Pt. 14
Save 38 min

On the way N from Pt. 13 look for pollution from Pueblo.
Profile in Pueblo plume up to 18 kft, (default spiral at Pt. 14)

Pt. 14 to Pt. 15 across Colorado Springs within mixed layer.

Pt. 15 to Pt. 17 across Denver to BAO tower (Pt. 17)
Include missed approach at Erie municipal airport (Pt. 16)
Spiral profile around BAO tower (Pt. 17) up to 15 kft., spiral descent at Pt. 17.

Pt. 17 to Pt. 18 to Pt. 9 to Pt. 20 within mixed layer, Rawhide power plant near Pt. 18

At Pt. 20, Racetrack profile to 18 kft.

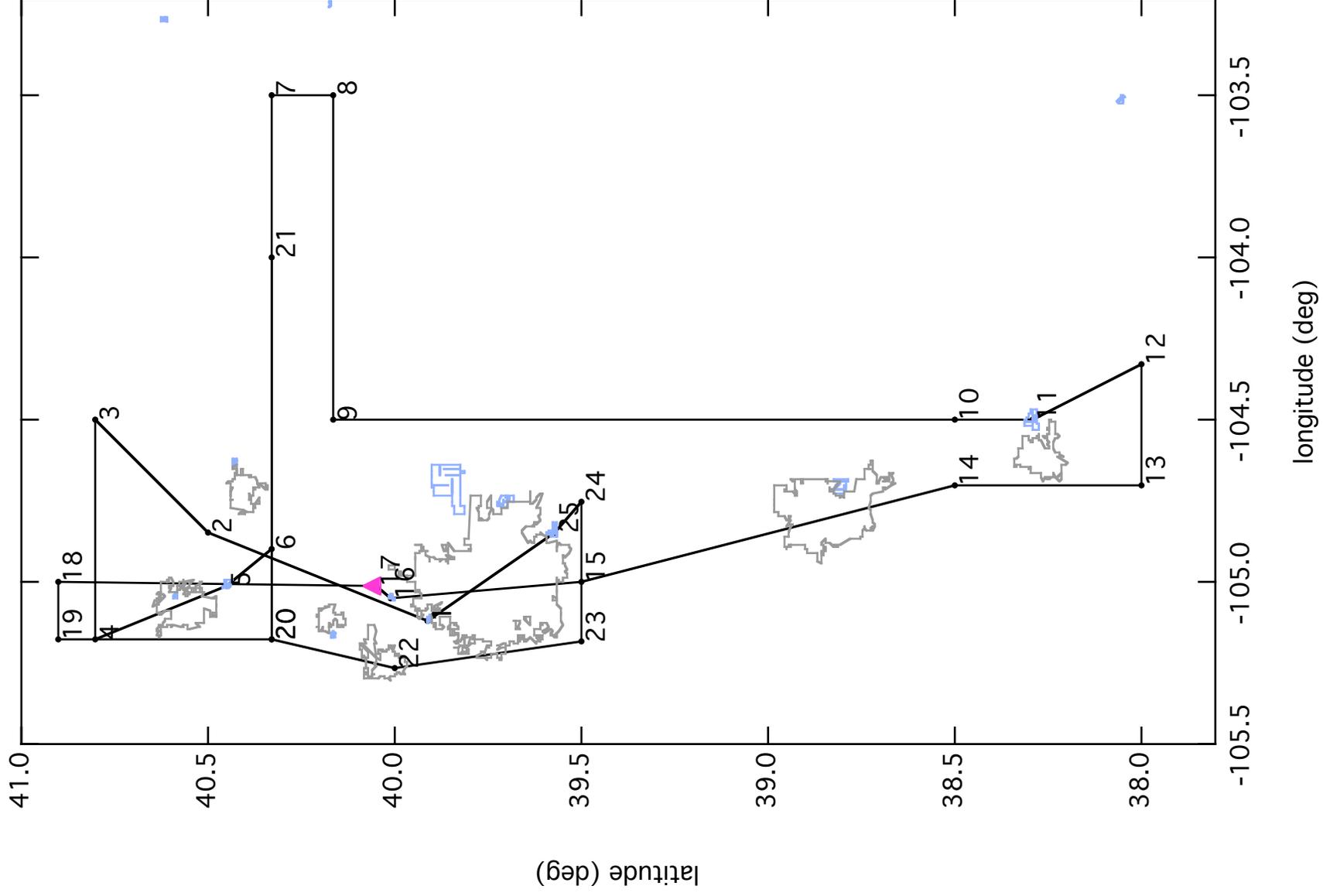
==>	Opportunity to save time <==
Pt. 20 to Pt. 21 at 18 kft, calibration, Flight Scientist calls for end of calibration	Skip Pt. 21, Calibration during
Spiral descent to mixed layer at Pt. 21	holding pattern at Pt. 20
Return to Pt. 20 in mixed layer N. of Platte river within mixed layer.	16 min

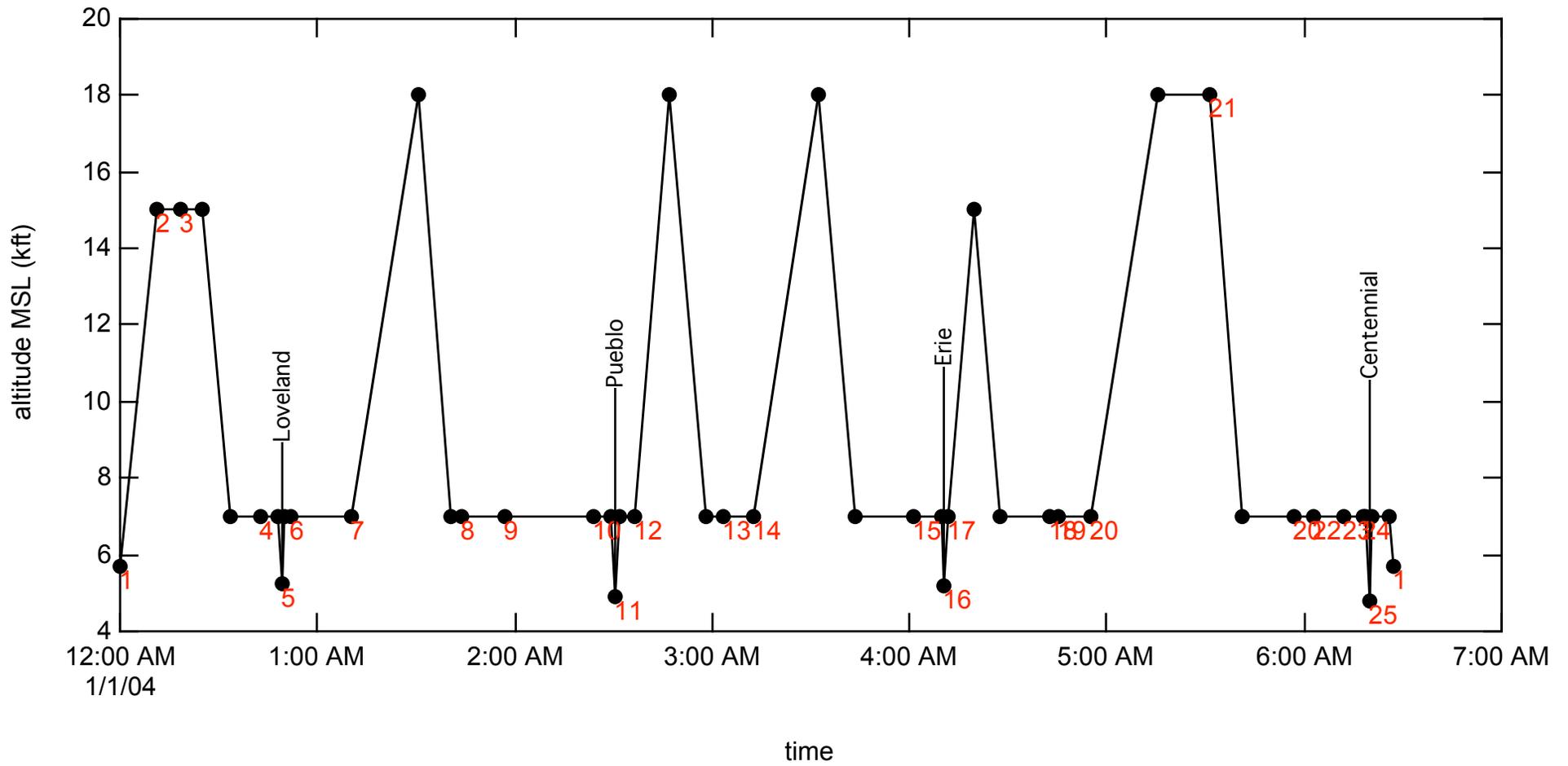
Pt. 20 to Pt. 22 (Boulder) to Pt. 23 (S of Chatfield reservoir) along foot hills,
urban pollution with winds from the east.

Pt. 24 to Pt. 25, missed approach at Pt. 25 Centennial airport.

Pt. 25 to Pt. 1 across Denver within mixed layer.

Return to Rocky Mountain Metropolitan airport.
Flight time : ~ 6.5 hrs





time_altit	altit_kft	alt_way_point	latw_deg	latw_min	lngw_deg	lngw_min	latw	lngw	pntw
00:00:00	5.673	Rocky Mtn Metro	39	54.5	-105	7.0	39.9088	-105.117	1
00:11:07	15		40	30.0	-104	51.0	40.5	-104.85	2
00:18:15	15	calibration	40	48.0	-104	30.0	40.8	-104.5	3
00:25:15	15	calibration							
00:33:15	7	spiral profile							
00:42:24	7		40	48.0	-105	10.8	40.8	-105.18	4
00:48:00	7								
00:49:00	5.26	KFNL Ft. Collins	40	27.1	-105	0.7	40.4518	-105.011	5
00:50:00	7								
00:51:38	7		40	19.8	-104	54.0	40.33	-104.9	6
01:10:37	7	racetrack profile	40	19.8	-103	30.0	40.33	-103.5	7
01:30:37	18	racetrack profile							
01:40:37	7	profile down							
01:43:32	7		40	10.0	-103	30.0	40.1666	-103.5	8
01:57:07	7		40	10.0	-104	30.0	40.1666	-104.5	9
02:24:00	7		38	30.0	-104	30.0	38.5	-104.5	10
02:29:31	7								
02:30:31	4.9	KPUB Pueblo	38	17.3	-104	29.8	38.2891	-104.497	11
02:31:31	7								
02:36:10	7	spiral profile up	38	0.0	-104	19.8	38	-104.33	12
02:47:10	18	spiral profile up							
02:58:10	7	spiral down							
03:03:21	7		38	0.0	-104	42.0	38	-104.7	13
03:12:15	7	racetrack profile	38	30.0	-104	42.0	38.5	-104.7	14
03:32:15	18	racetrack profile							
03:43:15	7	spiral down							
04:01:31	7		39	30.0	-105	0.0	39.5	-105	15
04:09:37	7								
04:10:37	5.2	KEIK Eire Munic	40	0.6	-105	2.9	40.0102	-105.048	16
04:11:29	7	Erie Tower	40	3.0	-105	0.6	40.05	-105.01	17
04:19:29	15	spiral up							
04:27:29	7								
04:42:37	7		40	54.0	-105	0.0	40.9	-105	18
04:45:02	7		40	54.0	-105	10.8	40.9	-105.18	19
04:55:10	7	racetrack profile	40	19.8	-105	10.8	40.33	-105.18	20
05:15:10	18	calibration							
05:31:10	18	profile down	40	19.8	-103	60.0	40.33	-104	21
05:41:10	7								
05:57:10	7		40	19.8	-105	10.8	40.33	-105.18	20
06:03:05	7	Boulder	40	0.0	-105	16.0	40	-105.267	22
06:12:03	7		39	30.0	-105	11.0	39.5	-105.183	23
06:17:58	7		39	30.0	-104	45.0	39.5	-104.75	24
06:18:53	7								
06:19:53	4.8	Centennial	39	34.2	-104	51.0	39.5701	-104.849	25
06:20:53	7								
06:25:55	7								
06:26:55	5.673	Rocky Mtn Metro	39	54.5	-105	7.0	39.9088	-105.117	1

Colorado Power Plants
Sized/colored by 2005 NOx emissions

